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A NEW SPECIES OF CYPSELOSOMATIDAE FROM LORD HOWE ISLAND (DIPTERA, MICROPEZOIDEA)

By David K. McAlpine
The Australian Museum, Sydney

Abstract

A new species of *Cypselosoma* is described from Lord Howe Island, New South Wales. Some of its unusual characters necessitate a revision of the means of differentiating the two known genera of Cypselosomatidae.

Introduction

The Cypselosomatidae are a very small Oriental and Australian family of acalyptrate flies with about five previously recognized species (see McAlpine, 1966, for discussion of relationships, summary of records, and references). Further information on relationships in the Micropezoidea is given by Griffiths (1972) and McAlpine (1975). Hennig (1971) mentions a species of *Cypselosoma* from Nepal.

I maintain the Pseudopomyzidae and Cypselosomatidae as separate families because the characters they have in common appear to be symplesiomorphic in relation to those of other Micropezoidea or are of unknown phylogenetic significance (e.g. the reduction of certain wing-veins so commonly found among acalyptrate flies), and because there is a possibility that they may not be more closely related to each other than at least one of them is to some other members of Micropezoidea. The Pseudopomyzidae seem too uniform structurally, e.g. in antennal structure and shape of the second basal cell, to allow the probability that they are polyphyletic.

Lord Howe Island is situated almost 200 km from the east coast of Australia. Its terrestrial flora and fauna are largely oceanic, having reached the island by dispersal over the sea. While not rich in species they include some

interesting endemics. For a summary of the natural history of the island see Smith (1974). The new species here described was found in the stunted, mossy rainforest on the summit of Mount Gower. This area is inhabited by some of the rarer organisms endemic to the island, including the woodhen, *Tricholimnas sylvestris* (Sclater), and the gesneriaceous tree, *Negria rhabdothamnoides* F. Muell. (see Green, 1973).

The occurrence on Lord Howe Island of a member of the Cypselosomatidae which, while very distinctive, is related to the cavernicolous Australian mainland species, indicates that the family has been present in the Australian region long enough to develop some distinctive forms, i.e. probably since well before the close of the Tertiary.

Cypselosoma disneyi n. sp.

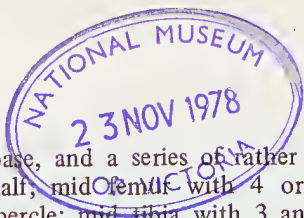
Fig. 1

FEMALE

Coloration. Head black; postgena dark brown; face, parafacial, and upper part of cheek bordering eye yellowish brown. Antenna yellowish brown, suffused with blackish brown on dorsal surface of segments. Prelabrum blackish; palpus and proboscis pale, dull yellowish. Thorax black, rather shining, suffused with yellowish brown on lateral parts of mesoscutum and upper part of mesopleuron; sternopleuron with yellowish patch on desclerotized area of upper margin. Legs black; fore leg with only tarsal segment 1 paler, creamy white; mid and hind legs with coxa, trochanter, and base of femur pale yellowish, with tarsus pale yellowish having 2 distal segments (mid tarsus) or 3 distal segments (hind tarsus) brown. Wing with 3 dark grey somewhat nebulous marks, one apical, one forming an irregular transverse band between anterior and discal crossveins, and one forming a blotch on anterior part of wing limited on basal side by termination of vein 1 and fork of veins 2 + 3. Haltere pale yellowish; capitellum blackish with white tip. Abdominal tergites and ovipositor sheath blackish; compound tergite 1 + 2 with large pale yellowish transverse central mark.

Head a little more depressed than in *C. australe*, but not markedly flattened as in the genus *Formicosepsis*; height of cheek about 0.2 of height of eye; eye oblique, slightly longer than high; cephalic chaetotaxy as in *C. australe*. Antennal segment 3 smaller than in *C. australe*.

Thorax slightly more depressed and more slender than in *C. australe*; scutellum small and convex, with bristles of discal pair only slightly more widely separated than those of apical pair; the following bristles present: 4 pairs of strong dorsocentrals, the foremost with a minute setula in front in addition to a short scapular bristle just above pronotum; acrostichals one pair only, situated well in front of suture; humeral; 2 notopleurals; presutural; 2 supra-alar (or supra-alar and postalar); a pair of strong apical scutellars and a pair of much shorter but fairly stout discal scutellars. Fore femur with rather long preapical posteroventral bristle, a series of posteroventral setulae



extending from this bristle almost to base, and a series of rather short but strong anteroventral spines on distal half, mid femur with 4 or 5 strong anteroventral bristles mounted on a tubercle; mid tibia with 3 anterodorsal bristles, 3 strong posterodorsal bristles and a very short basal one, 2 anteroventral bristles, one preapical ventral bristle, and several much shorter bristles at and near apex; other tibiae unarmed. Wing structurally very similar to that of *C. australe*; second costal cell and whole of first basal cell microtrichose.

Abdomen narrowly ovoid; ovipositor sheath subconical, slightly swollen basally; tergite 2 with small dense tuft of setulae on each side.

Dimensions: total length 4.2 mm; length of thorax 2.0 mm; length of wing 2.9 mm.

Holotype ♀ (unique): Mount Gower, Lord Howe Island, New South Wales (summit area), 15.iii.1978 (Australian Museum), H. J. de S. Disney.

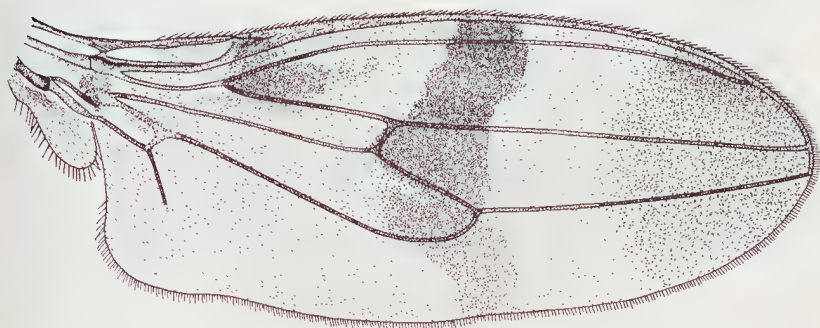


Fig. 1. *Cypselosoma disneyi*, wing.

Comparative notes

C. disneyi differs from the two other species of the genus in its more slender habitus, in having the eye longer than high, in the very narrow cheek, in having only four pairs of dorsocentral bristles and a single (anterior) pair of acrostichal bristles, and in having conspicuous dark markings on the wing. Some of these characters are more typical of the allied genus *Formicosepsis* than of *Cypselosoma* according to the key previously given by me (McAlpine, 1966), though in the structure of wing and prothorax there is no approach to *Formicosepsis*.

Previously (McAlpine, 1966: 675) I tabulated 14 character differences between *C. gephyrae* and *C. australis* (correctly *C. australe*). Excluding three characters restricted to the male sex, unknown for *C. disneyi*, the new species

disagrees with *C. gephyrae* in all characters tabulated and agrees, except as follows, with characters tabulated for *C. australe*: acrostichal bristles reduced to a single anterior pair (two anterior pairs in *C. australe*, six pairs in a complete series in *C. gephyrae*); mid tibia with one more anterodorsal bristle (total three) than in *C. australe*.

Despite its aberrant features, *C. disneyi* resembles *C. australe* much more closely than it does any other member of the Cypselosomatidae, and I conclude that there is close relationship between the two species. This accords with geographical data, for *C. australe* lives on the nearest part of the Australian mainland to the island habitat of *C. disneyi* at almost identical latitude.

The key to genera of Cypselosomatidae must be modified as follows to accommodate the characters of the new species:—

KEY TO GENERA OF CYPSELOSOMATIDAE

1. Prothorax very prominent, neck-like; wing much narrowed basally, with vein 6 vestigial beyond anal cell and alula reduced; apex of scutellum directed vertically upwards *Formicosepsis*
- Prothorax short and inconspicuous; wing not narrowed basally, with vein 6 distinct and alula broad; apex of scutellum directed posteriorly *Cypselosoma*

Acknowledgements

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